

DOCKET NO.: 216188US0DIV

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: :

Takanori YAMASHITA, et al. :

SERIAL NO.: NEW APPLICATION :

FILED: HERewith :

FOR: INORGANIC PARTICLE-CONTAINING COMPOSITION, TRANSFER FILM  
COMPRISING THE SAME AND PLASMA DISPLAY PANEL PRODUCTION  
PROCESS

**PRELIMINARY AMENDMENT**

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

Prior to examination on the merits, please amend the above-identified application as follows.

**IN THE SPECIFICATION**

Page 1, before line 1, please insert

--This application is a Divisional of U.S. Application Serial No. 09/409,074, filed on September 30, 1999, now allowed.--

**IN THE CLAIMS**

Please cancel Claims 1-7.

Please amend the claims as follows.

--8. (Amended) A plasma display panel production process, comprising:  
transferring a film forming material layer of a transfer film to a surface of a substrate,

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thereby obtaining a transferred film forming material layer on said substrate; and

baking the transferred film forming material layer to form an dielectric layer on the substrate;

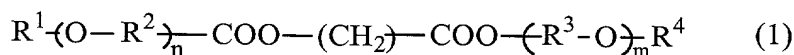
wherein said transfer film comprises a base film and said film forming material layer formed of an inorganic particle-containing composition on the base film;

wherein said inorganic particle-containing composition comprises

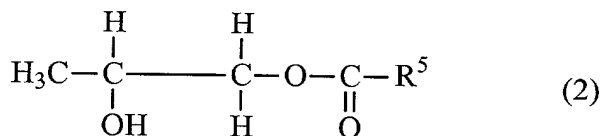
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein  $R^1$  and  $R^4$  are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups,  $R^2$  and  $R^3$  are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups,  $m$  is an integer of 0 to 5, and  $n$  is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein  $R^5$  is an alkyl group having 1 to 30 carbon atoms or alkenyl group.

9. (Amended) A plasma display panel production process, comprising:

transferring a film forming material layer formed of an inorganic particle-containing

composition to a surface of a substrate, thereby obtaining a transferred film forming material layer on said substrate;

forming a resist film on the transferred film forming material layer;

exposing the resist film to form a resist pattern latent image;

developing the resist film to form a resist pattern;

etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

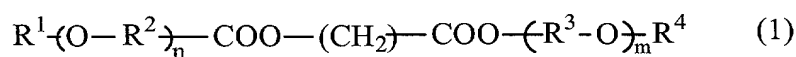
baking the pattern layer to form a constituent element selected from the group consisting of a barrier, an electrode, a resistor, a dielectric layer, phosphor, a color filter and a black matrix;

wherein said inorganic particle-containing composition comprises

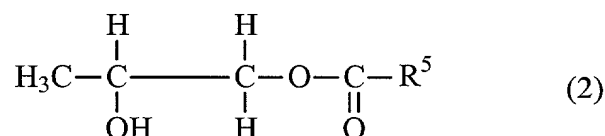
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein  $R^1$  and  $R^4$  are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups,  $R^2$  and  $R^3$  are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups,  $m$  is an integer of 0 to 5, and  $n$  is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group.

10. (Amended) A plasma display panel production process, comprising:

transferring a film forming material layer formed of inorganic particle-containing composition to a surface of a substrate;

forming a resist film on the transferred film forming material layer;

exposing the resist film to form a resist pattern latent image;

developing the resist film to form a resist pattern;

etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

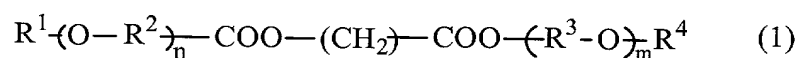
baking the pattern layer to form electrodes;

wherein said inorganic particle-containing composition comprises

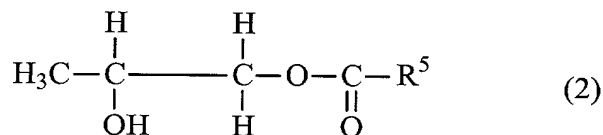
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein R<sup>1</sup> and R<sup>4</sup> are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups, R<sup>2</sup> and R<sup>3</sup> are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups, m is an integer of 0 to 5, and n is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group;

wherein the inorganic particle (A) is at least one electrically co-ductive particle pa  
selected from the group consisting of Ag, Au, Al, Ni, Ag-Pd alloy, Cu and Cr.

11. (Amended) A plasma display panel production process, comprising:

forming a laminate film consisting of a resist film and a film forming material layer  
formed of an inorganic particle-containing composition on a base film in the order named;

transferring the laminate film formed on the base film to the surface of a substrate;

exposing the resist film constituting the laminate film to form a resist pattern latent  
image;

developing the resist film to form a resist pattern;

etching the film forming material layer to form a pattern layer corresponding to the resist  
pattern; and

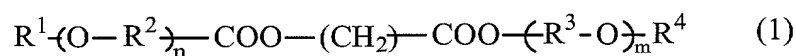
baking the pattern layer to form a constituent element selected from the group consisting  
of a barrier, electrode, resistor, dielectric layer, phosphor, color filter and black matrix;

wherein said inorganic particle-containing composition comprises

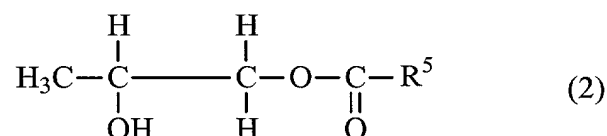
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented  
by formula (1):



wherein  $R^1$  and  $R^4$  are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups,  $R^2$  and  $R^3$  are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups,  $m$  is an integer of 0 to 5, and  $n$  is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein  $R^5$  is an alkyl group having 1 to 30 carbon atoms or alkenyl group.

12. (Amended) A plasma display panel production process, comprising:

forming a laminate film consisting of a resist film and a film forming material layer formed of an inorganic particle-containing composition on a base film in the order named;

transferring the laminate film formed on the base film to the surface of a substrate;

exposing the resist film constituting the laminate film to form a resist pattern latent image;

developing the resist film to form a resist pattern;

etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

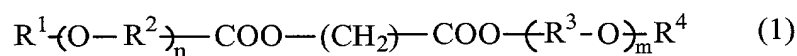
baking the pattern layer to form electrodes;

wherein said inorganic particle-containing composition comprises

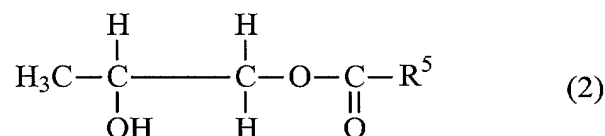
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein  $R^1$  and  $R^4$  are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups,  $R^2$  and  $R^3$  are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups,  $m$  is an integer of 0 to 5, and  $n$  is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein  $R^5$  is an alkyl group having 1 to 30 carbon atoms or alkenyl group;

wherein the inorganic particle (A) is at least one electrically co-aductive particle pa selected from the group consisting of Ag, Au, Al, Ni, Ag-Pd alloy, Cu and Cr.--

### **BASIS FOR THE AMENDMENT**

This application is a Divisional of U.S. Application Serial No. 09/409,074, filed on September 30, 1999, now allowed. The present amendment cancels Claims 1-7, directed to the elected subject matter in the parent application. Claims 8-12, restricted from the parent application, are now pursued in this Divisional application. Claims 8-12 have been amended to incorporate the subject matter of Claims 1, 2 and 7 from which they formerly depended.

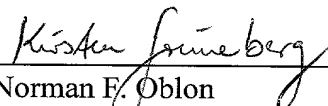
No new matter is believed to have been added by entry of this amendment. Entry and favorable consideration are respectfully requested.

Upon entry of this amendment Claims 8-12 will be active in this application.

Applicants submit that the present application is now in condition for examination on the merits and early notice of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

  
Norman F. Oblon  
Attorney of Record  
Registration No.: 24,618

Kirsten A. Grueneberg, Ph.D.  
Registration No.: 47,297



**22850**

Tel. (703) 413-3000  
Fax. (703) 413-2220  
(OSMMN 11/98)

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Serial No.: New Application  
Amendment Filed On: November 19, 2001

**IN THE SPECIFICATION**

Page 1, before line 1, please insert

--This application is a Divisional of U.S. Application Serial No. 09/409,074, filed on September 30, 1999, now allowed.--

**IN THE CLAIMS**

Please cancel Claims 1-7.

Please amend the claims as follows.

--8. (Amended) A plasma display panel production process, comprising [the steps of]:  
transferring [the] a film forming material layer of [the] a transfer film [of claim 7] to [the]  
a surface of a substrate, thereby obtaining a transferred film forming material layer on said  
substrate; and

baking the transferred film forming material layer to form an dielectric layer on the  
substrate;

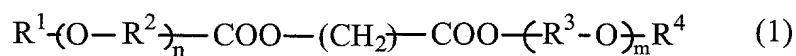
wherein said transfer film comprises a base film and said film forming material layer  
formed of an inorganic particle-containing composition on the base film;

wherein said inorganic particle-containing composition comprises

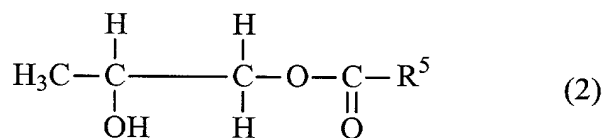
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented  
by formula (1):



wherein R<sup>1</sup> and R<sup>4</sup> are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups, R<sup>2</sup> and R<sup>3</sup> are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups, m is an integer of 0 to 5, and n is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group.

9. (Amended) A plasma display panel production process, comprising [the steps of]:  
transferring a film forming material layer formed of [the] an inorganic particle-containing composition [of claim 1] to [the] a surface of a substrate, thereby obtaining a transferred film forming material layer on said substrate;

forming a resist film on the transferred film forming material layer;

exposing the resist film to form a resist pattern latent image;

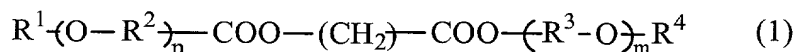
developing the resist film to form a resist pattern;

etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

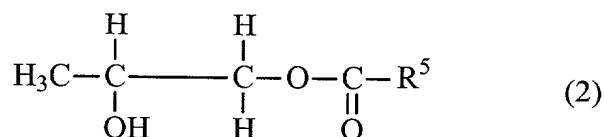
baking the pattern layer to form a constituent element selected from the group consisting of a barrier, an electrode, a resistor, a dielectric layer, phosphor, a color filter and a black matrix;

wherein said inorganic particle-containing composition comprises

(A) an inorganic particle;  
 (B) a binder resin; and  
 (C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein R<sup>1</sup> and R<sup>4</sup> are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups, R<sup>2</sup> and R<sup>3</sup> are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups, m is an integer of 0 to 5, and n is an integer of 1 to 10, and compounds represented by the following formula (2):



wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group.

10. (Amended) A plasma display panel production process, comprising [the steps of]:  
 transferring a film forming material layer formed of [the] inorganic particle-containing composition [of claim 2] to [the] a surface of a substrate;  
 forming a resist film on the transferred film forming material layer;  
 exposing the resist film to form a resist pattern latent image;  
 developing the resist film to form a resist pattern;  
 etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

baking the pattern layer to form electrodes;

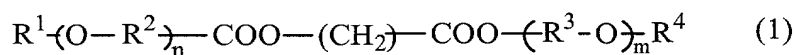
wherein said inorganic particle-containing composition comprises

(A) an inorganic particle;

(B) a binder resin; and

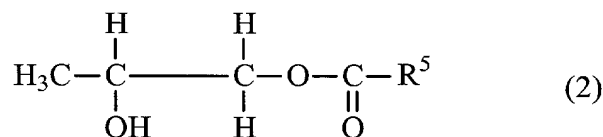
(C) at least one plasticizer selected from the group consisting of a compound represented

by formula (1):



wherein R<sup>1</sup> and R<sup>4</sup> are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups, R<sup>2</sup> and R<sup>3</sup> are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups, m is an integer of 0 to 5, and n is an integer of 1 to 10.

and compounds represented by the following formula (2):



wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group;

wherein the inorganic particle (A) is at least one electrically co-aductive particle pa  
selected from the group consisting of Ag, Au, Al, Ni, Ag-Pd alloy, Cu and Cr.

11. (Amended) A plasma display panel production process, comprising [the steps of]:

forming a laminate film consisting of a resist film and a film forming material layer  
formed of [the] an inorganic particle-containing composition [of claim 1] on a base film in the  
order named;

transferring the laminate film formed on the base film to the surface of a substrate;  
 exposing the resist film constituting the laminate film to form a resist pattern latent image;  
 developing the resist film to form a resist pattern;  
 etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

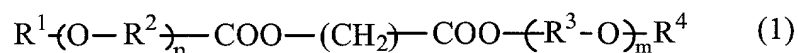
baking the pattern layer to form a constituent element selected from the group consisting of a barrier, electrode, resistor, dielectric layer, phosphor, color filter and black matrix;

wherein said inorganic particle-containing composition comprises

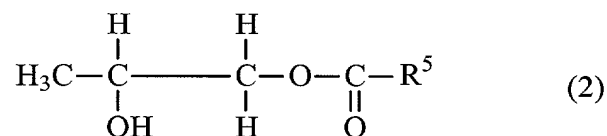
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein R<sup>1</sup> and R<sup>4</sup> are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups, R<sup>2</sup> and R<sup>3</sup> are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups, m is an integer of 0 to 5, and n is an integer of 1 to 10,  
and compounds represented by the following formula (2):



wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group.

12. (Amended) A plasma display panel production process, comprising [the steps of]:

forming a laminate film consisting of a resist film and a film forming material layer formed of [the] an inorganic particle-containing composition [of claim 2] on a base film in the order named;

transferring the laminate film formed on the base film to the surface of a substrate;

exposing the resist film constituting the laminate film to form a resist pattern latent image;

developing the resist film to form a resist pattern;

etching the film forming material layer to form a pattern layer corresponding to the resist pattern; and

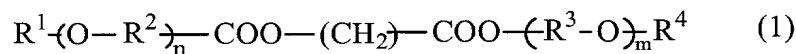
baking the pattern layer to form electrodes;

wherein said inorganic particle-containing composition comprises

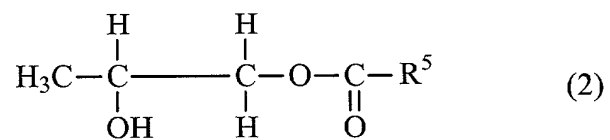
(A) an inorganic particle;

(B) a binder resin; and

(C) at least one plasticizer selected from the group consisting of a compound represented by formula (1):



wherein R<sup>1</sup> and R<sup>4</sup> are the same or different alkyl groups having 1 to 30 carbon atoms or alkenyl groups, R<sup>2</sup> and R<sup>3</sup> are the same or different alkylene groups having 1 to 30 carbon atoms or alkenylene groups, m is an integer of 0 to 5, and n is an integer of 1 to 10,  
and compounds represented by the following formula (2):




---

wherein R<sup>5</sup> is an alkyl group having 1 to 30 carbon atoms or alkenyl group:

wherein the inorganic particle (A) is at least one electrically co-aductive particle pa  
selected from the group consisting of Ag, Au, Al, Ni, Ag-Pd alloy, Cu and Cr.--